4-10-2000

Soybean seed treatments for 2000

X. B. Yang
Iowa State University, xbyang@iastate.edu

Soybean seed treatments for 2000

Abstract
Dry weather conditions are predicted for this year's growing season. Although soybean seedling disease is generally not a concern under dry conditions, I have received questions on

1. seed treatments because of the early planting of soybeans in March
2. the effects of seed discoloration on seed quality, and
3. new seed treatment chemicals on the market.

Keywords
Plant Pathology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

Soybean seed treatments for 2000

Dry weather conditions are predicted for this year's growing season. Although soybean seedling disease is generally not a concern under dry conditions, I have received questions on

1. seed treatments because of the early planting of soybeans in March
2. the effects of seed discoloration on seed quality, and
3. new seed treatment chemicals on the market.

Early planting

In a normal-weather season, early-planted soybeans would grow in low-temperature, high-moisture soil, which increases seedling disease risk. If this spring's weather conditions are dry, seedling disease risk is less of a concern because dry soil is not conducive for disease occurrence. However, if soybean seeds are planted in fields with high moisture, such as river bottom fields, seed treatments may be needed. In fields with high moisture, disease risk may be high for early-planted soybean. Cool (<60°F) and wet soils are conducive to fungal seed rot or seedling death caused by Pythium and Fusarium.

 [1] **Damping-off caused by *Pythium*.**

A study at Iowa State University (ISU) showed that most problematic Pythium species in Iowa prefer cool soil temperatures (<60°F) for infection.

Seed quality

Severe seed discoloration is an indicator of potential low-quality soybean seeds. However, only some causes of discoloration are associated with reduced germination rate. Discoloration may be caused by stress, insect wounding, or disease. It is unlikely that stress reduces seed quality, and thus germination, as much as viral or fungal diseases. Severe infection by viral and fungal diseases may result in reduced seed germination and is associated with seed discoloration. Seed treatment for seeds infected by fungal pathogens can improve germination rate. Treatments for seed infected with viruses are not available.

New chemical treatments

Chemicals are effective in controlling some fungi and these chemicals are often specific for certain diseases. Only the use of the correct chemicals can prevent damping-off. Refer to previous ICM articles on seed and seedling treatments for lists of chemicals and their control efficacies for major soybean seedling pathogens in Iowa. Generally, Apron is effective for controlling *Pythium* and *Phytophthora*.

ApronMaxx is a new soybean seed treatment. It is a prepack formulation of Maxim (fludioxonil at 2.5 g/100 kg seed) and Apron XL (at 3.75g/100 kg seed). This seed treatment chemical can effectively control a broad spectrum of soybean seedling diseases, including almost all important seedling diseases in Iowa. It reduces fungal damage by contact and systematic control. Field evaluations by scientists at the Universities of Illinois, Missouri, and Wisconsin as well as ISU show an increase in yield and stand establishment. This chemical also is very effective against *Phomopsis*, a major fungus causing seed-quality problems in the past 2 years. Furthermore, this treatment can be used for on-farm seed treatments with simple equipment mounted directly and conveniently on a wagon or a truck box to dispense fungicides onto seeds during planting.

This article originally appeared on page 27 of the IC-484 (4) -- April 10, 2000 issue.
